



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/810,812

03/29/2004

Keiji Tsukada

9711

7590 04/10/2007  
MATTINGLY, STANGER & MALUR, P.C.  
Suite 370  
1800 Diagonal Road  
Alexandria, VA 22314

EXAMINER

LARYEA, LAWRENCE N

ART UNIT

PAPER NUMBER

3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
----------------------------------------	-----------	---------------

3 MONTHS

04/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/810,812

Applicant(s)

TSUKADA ET AL.

Examiner

Lawrence N. Laryea

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/29/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 03/29/04 07/14/04.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 03/29/2004. It is noted, however, that applicant has not filed a certified copies of the Foreign Patent Documents 2-249530, 8-266499, 6-121776, 10-305019, Publications "JAPANESE JOURNAL OF MEDICAL INSTRUMENTATION, Vol. 66, No. 10, 1996, pp. 623-624", "Tenth International Conference on Biomagnetism, Feb. 17, 1996, Y. Yoshida et al, p. 351," "Phys. Med. Biol., Vol. 32, No. 1, 1987, pp. 11-22, and JAPAN 09-052769 filed on 03/07/1997 and JAPAN 09-060488 filed on 03/14/1997 applications as required by 35 U.S.C. 119(b).

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Byram (Patent 4492923)** in view of **Tomita et al (Patent 5601081)**.

4. Re Claims 26 and 27: **Byram** discloses a method for estimating magnetic field source of a motion of an object (**See Col. 2 Lines 5-17 and Abstract**) steps which is

Art Unit: 3768

capable of measuring a magnetic field component ( $B_z(x,y,t)$ ) direction of a magnetic field generated by a body by using a plurality of superconducting quantum interference devices (**See Col. 7 Lines 18-20**) wherein a plane parallel to the surface of the body corresponds to the xy plane of a Cartesian coordinate system and a direction perpendicular to the surface of the body corresponds to z axis of the Cartesian coordinate system; capable of determining a value proportional to a root (**See Col. 2 Lines 21-40**) of magnetic field component ( $B_z(x,y,t)$ ) in the z axis direction (**field along the direction of the motion which could be X or Y or Z**).

5. **Byram** discloses the above claimed invention, however **Byram** does not disclose that the method includes estimating a magnetic field source comprising the steps of: measuring a magnetic field component ( $B_z(x,y,t)$ ) in a z axis direction of a biomagnetic field generated from a living body, displaying the isomagnetic field map; and solving an inverse problem for estimating a position and a magnitude of a magnetic field source within said living body and includes calculation of magnetic fields at a plurality of positions (x,y) where said biomagnetic fields are detected.

6. **Tomita et al (Patent 5601081)** disclose a method for estimating magnetic field source comprising the steps of measuring a magnetic field component ( $B_z(x,y,t)$ ) in a z axis direction of a biomagnetic field generated from a living body, displaying the isomagnetic field map (**See Col. 8 Lines 45-56 and Figure 1**), solving an inverse problem for estimating a position and a magnitude of a magnetic field source within said living body (**See Col. 2 Lines 1-46**) and calculating of magnetic fields at a plurality of positions where the biomagnetic fields are detected (**See Col. 3 Lines 17-39**).

Art Unit: 3768

It would have been obvious to one having ordinary skill in the art at the time invention was made to modify the method for estimating magnetic field source of motion of an object similar to that of **Byram** to include the steps of measuring a magnetic field component ( $B_z(x,y,t)$ ) in a z axis direction of a biomagnetic field generated from a living body, displaying the isomagnetic field, solving an inverse problem for estimating a position and a magnitude of a magnetic field source within said living body and calculating of magnetic fields at a plurality of positions where the biomagnetic fields are detected similar to that of **Tomita et al** in order to examine or measure a motional objects in a human body such as the heart and brain with high precision (**See Col. 3, lines 9-12**) as taught by **Tomita et al**.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence N. Laryea whose telephone number is 571-272-9060. The examiner can normally be reached on 9:30 a.m.-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3768

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LNL



ELENI MANTIS MERCADER  
SUPERVISORY PATENT EXAMINER